

REMARKS

Reconsideration of the subject application is requested in view of the foregoing amendments and the following remarks.

Claims 1-13 are the subject of the Office action. In this paper, new dependent claim 14 is added to address the configuration shown in FIG. 1 and discussed on page 10, line 24 to page 11, line 2, of the specification. No new matter is submitted. Upon entry of this paper, claims 1-14 will be pending.

Alleged Mootness of Applicant's Prior Argument

The top of page 2 of the Office action states that "Applicant's arguments with respect to claims 1-7 have been considered but are moot in view of the new ground(s) of rejection." This statement is traversed because, as explained below, Applicant's previous remarks are not moot for the following reasons.

First, in the current Office action, claims 1-7 stand rejected for alleged obviousness from Park in view of Kim. Note that Park is the primary reference in the rejection. In the previous Office action, claims 1-4 were rejected for alleged anticipation by Park, claims 5-6 were rejected for alleged obviousness from Park in view of Wu, and claim 7 was rejected for alleged obviousness from Park in view of Yagi. Note that Park was the primary reference in those rejections.

In his Reply of September 28, 2006, Applicant presented extensive discussion concerning the shortcomings of Park. Since Park was the primary reference in the previous Office action and still is the primary reference in the current Office action, **Applicant's arguments in the previous Reply concerning Park are not, and cannot be, moot**, and the examiner was not at liberty to dismiss those arguments.

Second, the middle of page 2 of the current Office action includes four lines that begin with "Applicant argue [*sic*; argues] that the park [*sic*; Park reference] discussed herein are satisfied by Yagi" This is the examiner's only response to Applicant's previous arguments concerning Park. The examiner's response is **improper because it only addresses one of Applicant's arguments, not all of Applicant's arguments, concerning Park**. Hence, the examiner has not made a complete response, contrary to the requirements of M.P.E.P. §§707.07, 707.07(f).

Third, in various large parts of the current Office action the examiner repeated grounds of rejection from the previous Office action that were based on Park (see page 3, large paragraph in middle of page; page 4, second paragraph, third paragraph, and fourth paragraph; page 7, large paragraph in middle of page; and page 8, large paragraph bridging pages 8 and 9). Since these were the same grounds of rejection that Applicant addressed at length in his previous Reply, Applicant's arguments concerning Park in the previous Office action cannot possibly be moot. The examiner is not at liberty to dismiss Applicant's prior arguments concerning Park and then turn around and repeat the rejections based on Park as the same primary reference.

More specifically, the examiner appears to have improperly ignored and dismissed the following from Applicant's previous Reply (see pages 5-7):

As already explained in the record, claim 1 is directed to a three-dimensional structure element that comprises a substrate and three-dimensional structures arranged in a predetermined effective area on the substrate. The three-dimensional structures have space portions, which are formed by removing a sacrificial layer, between the three-dimensional structures and the substrate. On the substrate, a dummy area is arranged to surround the effective area. The dummy area includes dummy structures arranged in it. The dummy structures have space portions, which are formed by removing a sacrificial layer, between the dummy structures and the substrate.

First, the Examiner has already admitted in the record (see page 2 of the previous Office action) that Park '390 does not disclose a dummy area surrounding an effective area, does not disclose dummy structures arranged in the dummy area, and does not disclose dummy structures having space portions, located between the dummy structures and the substrate and formed by removing a sacrificial layer. It is not understood (and the Office action contains no explanation of) why or how the Examiner has changed his mind on this point.

Second, regarding the claimed dummy area and dummy structures, Applicant quotes the following from the specification:

As shown in Fig. 1, plural dummy structures 33 are arranged in the dummy area 21 on the substrate 11. These dummy structures 33 are arranged to prevent the dummy area 21 from being heated to high temperature in a process of removing a sacrificial layer in a manufacturing method to be described later. The dummy structures 33 are formed in the same shape as the displacement portions 13 of the three-dimensional structures 1 and have legs 52

that are the same as the legs 52 of the displacement portions 13. In addition, the dummy structures 33 are arranged vertically and horizontally at the same pitch as the three-dimensional structures 1 in the effective area 20. However, the reflecting mirrors 2 and the wiring pattern layers are not formed in the dummy structures 33 in order to simplify a configuration thereof.

Specification, page 12, line 14 to page 13, line 2. In other words, the dummy structures of the three-dimensional structure element recited in claims 1-4 are arranged in an area (dummy area) where a large temperature difference occurs (outside the effective area) at least during manufacturing. The features of the dummy structures are different from the features of the three-dimensional structures in the effective area. A "dummy" object is an object that simulates or replaces something but lacks the function of the something. *American Heritage Dictionary*. Accordingly, the claimed dummy structures in the dummy area are formed in the same shape and have the same legs as the three-dimensional structures in the effective area but do not have other features (*e.g.*, reflecting mirrors and wiring pattern layers); thus, the dummy structures lack the function of the three-dimensional structures in the effective area and hence are not the same as the three-dimensional structures in the effective area.

The Examiner appears to believe that the "dummy structures" recited in claim 1 are exactly like the three-dimensional structures in the effective area. In view of the foregoing, this apparent belief is incorrect and unfounded.

Park neither discloses nor suggests dummy structures in a dummy area of any kind, much less a dummy area surrounding an effective area. In fact, Park does not teach or suggest a dummy area at all or what such an area would be or could be used for. The Examiner refers to FIG. 2L of Park and contends that the "left 301" is a claimed dummy structure in a dummy area and the "right 301" is a claimed three-dimensional structure in an effective area. This contention is incorrect and groundless. The left 301 is exactly the same as and has all the features of the right 301. There is no indication or suggestion whatsoever in Park that the left 301 and right 301 are different in any way from each other. There is also no indication or suggestion whatsoever that the right 301 is in an effective area and the left 301 is not. FIG. 2L of Park simply shows two items that are identical in every way; nothing more, nothing less. There is also no basis whatsoever in either FIG. 2L or its associated text in Park that would lead to any sensible conclusion that one of the items 301 is a dummy of anything, much less of the other item 301. Therefore, and for other reasons of record (including the Examiner's own admissions), claim 1 and its dependents (including new claims 8-13) are not anticipated by or obvious from Park.

In the prior Reply, Applicant presented other discussion concerning Park that also was improperly dismissed in the current Office action. This other discussion is referred to later below.

Applicant's prior arguments concerning Park went to the heart of the previous rejections and also go to the heart of the current rejections. Applicant hereby requests that the foregoing receive the proper consideration it should have been given previously. Proper consideration is not satisfied or evidenced by the examiner simply repeating the rejections in a subsequent Office action and/or alleging they are "moot." Consideration means consideration, **and the burden is now on the examiner to answer the substance of Applicant's argument.** M.P.E.P. §707.07(f).

Rejection Under 35 U.S.C. §112

Claim 7 stands rejected for alleged indefiniteness because of its use of the term "dry process." This rejection is traversed.

Claim terms are properly understood from reference to the specification, of which the claims are a part. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315, 79 U.S.P.Q.2d 1321, 1327 (Fed. Cir. 2005) (*en banc*). Representative dry processes are discussed at least on the following pages of the specification: page 2, lines 17-21; page 3, line 2 to page 4, line 18; page 17, line 26 to page 20, line 10; page 22, lines 6-12. In view of these disclosures, the recitation of "dry process" in claim 7 is not indefinite. Withdrawal of the rejection is requested.

Rejection of Claims 1-4, 8, and 10

Claims 1-4, 8, and 10 stand rejected for alleged obviousness from Park in view of Kim. This rejection is traversed for the following reasons.

The deficiencies of Park have already been discussed above and elsewhere in the record. First, as discussed above and previously, Park does not disclose, does not suggest, and does not even hint of anything concerning dummy structures. The examiner saying otherwise does not make it so in the light of clear and compelling evidence, above, to the contrary.

Second, the examiner already has admitted in the record (see lengthy quotation above) that "Park '390 does not disclose a dummy area surrounding an effective area, does not disclose dummy structures arranged in the dummy area, and does not disclose dummy structures having

space portions, located between the dummy structures and the substrate and formed by removing a sacrificial layer." Without more than is currently in the record, **the examiner cannot now make contentions regarding Park that fly in the face of the examiner's own prior admissions about the deficiencies of Park.**

Third, in view of the record and the examiner's prior admissions, Applicant makes the following replies to additional comments in the Office action:

1. On page 3, regarding claim 1, the Office action states, "Park discloses a substrate (312, For example Fig. 2L); and three-dimensional structures (right 301, For example Fig. 2L) . . . and on the substrate, a dummy area is arranged to surround the effective area, dummy structures are arranged in the dummy area, and the dummy structures have space portions (between left 430 and left 310, For example Fig. 2L), which are formed by removing a sacrificial layer, between the dummy structures (left 310, For example Fig. 2L) and the substrate (312, For example Fig. 2L)." **Since Park is silent on anything concerning dummy structures of any kind, this quoted statement is not true.** Furthermore, since Park is silent on dummy structures, the examiner merely saying that left 430 and left 310 are dummy structures does not make them so.

2. On page 4, regarding claim 2, the Office action states, "Park discloses a portion of the dummy structures (left 310, For example Fig. 2L) opposed to the substrate (312, For example Fig. 2L) is formed in a same shape as the three-dimensional structures (right 301, For example Fig. 2L)." **Since Park is silent on anything concerning dummy structures of any kind, this quoted statement is not true.**

3. On page 4, regarding claim 3, the Office action states, "Park discloses the dummy structures (left 301, For example Fig. 2L) have columns for fixing at least one section thereof to the substrate (312 For example Fig. 2L)." **Since Park is silent on anything concerning dummy structures of any kind, this quoted statement is not true.**

4. On page 4, regarding claim 4, the Office action states, "Park discloses the dummy structures (left 301, For example Fig. 2L) have a thin film (left 395, for example fig. 2L) covering the dummy area and plural columns arranged between the thin film (left 395, for

example fig. 2L) and the substrate (312, for example fig. 2L)." **Since Park is silent on anything concerning dummy structures of any kind, this quoted statement is not true.**

Regarding Kim, Applicant points out that, in view of Park's silence on anything concerning dummy structures and dummy regions, Park's silence on how to make dummy structures and dummy regions, and Park's silence on why dummy structures or regions would be desirable or necessary, there is no perceived motivation provided to the skilled person by Park to seek out Kim. Therefore, the combination of Park and Kim in the Office action appears to be hindsight reconstruction of the respective combinations of elements recited in the subject claims, which is an improper basis for an obviousness rejection. Applicant also points out that Kim fails to disclose or suggest anything about three-dimensional structures that have space portions formed by removing a sacrificial layer. Kim also fails to disclose or suggest dummy structures having space portions formed by removing a sacrificial layer. Kim pertains to forming ferroelectric capacitors as well as dummy versions of them. But, Kim's ferroelectric capacitors and dummy versions thereof do not have the instantly claimed three-dimensional structures with space portions. Kim also provides no information that would lead the skilled person to conclude that Kim's manner of forming ferroelectric capacitors could be adapted, with any assurance of success, to form the instantly claimed three-dimensional structures and dummy three-dimensional structures having space portions formed by removing a sacrificial layer. In fact, no mention of a sacrificial layer has been found in Kim.

Therefore, claim 1 and its dependents are not obvious from any combination of Park and Kim.

Regarding claim 8 (bottom of page 4 of the Office action), the Office action does not specifically state anything concerning Park, but by discussing Kim, the Office action implies that the examiner's contentions quoted above for claim 1 apply also to claim 8 (which depends from claim 1). **Since Park is silent on anything concerning dummy structures of any kind, the examiner's implication is incorrect and unfounded.** As stated already in the record (Reply of 2/26/07):

Each of claims 2-4 and 8-13 adds at least one respective feature to the combination of features recited in claim 1. Hence, each of these dependent claims

is properly allowable over Park for all the reasons discussed above (and elsewhere in the record) regarding claim 1. Each of these dependent claims is also properly allowable because each of the respective combinations is patentable in its own right over Park.

Regarding claim 10 (top of page 5 of Office action), the Office action implies that the examiner's contentions quoted above for claim 1 apply to claim 10 (which depends from claim 1). **Since Park is silent on anything concerning dummy structures of any kind, this implication in the Office action is incorrect and unfounded.** The examiner also states that "Park discloses at least one respective leg (365, For example Fig. 2l) coupled to the substrate (312, For example Fig. 2L); and each of the displacement portions extends in a cantilever manner from the at least one leg." **Since Park is silent on anything concerning dummy structures of any kind, this quoted statement does not fulfill the deficiencies of Park regarding the claimed dummy structures.**

From the foregoing remarks and Applicant's discussion elsewhere in the record, Park is not a proper primary reference for use in the instant obviousness rejection. Since Park is silent on anything concerning dummy structures of any kind, and of why such structures would be necessary or desirable, the person of ordinary skill in the art, faced with the task of providing dummy structures as claimed, would have no reason to consult Park and thus would not consult Park. Also, in view of the deficiencies in Park of anything concerning dummy structures, the skilled person would not be motivated to combine Park with Kim or any other reference to derive the subject claims. **Since there is no motivation to combine Kim and Park, the current obviousness rejection is improper and cannot stand.** Also, Kim fails to discuss or suggest three-dimensional structures (and dummy versions thereof) having space portions formed by a sacrificial layer.

Therefore, claims 1-4, 8, and 10 are properly allowable. Withdrawal of the rejection is requested.

Rejection of claims 9 and 11-13

Claims 9 and 11-13 stand rejected for alleged obviousness from Park, Kim, and Wu. This rejection is traversed.

First, this rejection is not understood because claims 11-13 depend from claim 10, which depends from claim 9. How can claims 9 and 11-13 be rejected, but not claim 10?

Second, claims 9-13 depend from claim 1 and include all the elements recited in claim 1. In view of the allowability of claim 1 over any combination of Park and Kim, as discussed above, claims 9-13 are similarly allowable over these two references.

Third, page 5 of the Office action contends that "with respect to claim 9, park [*sic*; Park] disclosed invention set forth to [*sic*; in] claim 1, wherein each of the three-dimensional structures in the effective area and each of the dummy structures comprises a respective displacement portions [*sic*; portion]." This contention is traversed. As discussed above and elsewhere in the record, **Park does not disclose, suggest, or hint at anything concerning dummy structures; therefore, the examiner's contention is incorrect and unfounded.**

Fourth, as discussed above, since Park has nothing to do with dummy structures, there is no motivation for the skilled person to consult Park about anything concerning dummy structures and there is no motivation for the skilled person to combine Park with either of Kim and Wu to derive the subject claims.

Fifth, Applicant agrees with the examiner's admission, in the middle of page 5 of the Office action and concerning claim 9, that "Park did not disclose [*sic*; disclose] the three-dimensional structures include [*sic*; including] displacement portions."

Sixth, any discussion in Wu of three-dimensional micromirrors does not fulfill the deficiencies of any combination of Park and Kim, as discussed above.

Seventh, Wu (like Park) also fails to disclose, suggest, or hint at anything concerning dummy structures. Hence, there is no motivation for the skilled person to combine Wu with Park and/or with Kim to derive the subject claims.

Eighth, contrary to the contention on page 5 of the Office action concerning claims 9, "the purpose disclosed by Wu" would not have been recognized in the "pertinent art of Park." Wu's "purpose" is to increase the speed, certainty, and exactitude of movements of micromirrors while reducing stiction of the components of the optomechanical switch comprising the micromirrors. Col. 7, lines 18-23. **This has no relation whatsoever to the claimed structures that include dummy areas and dummy structures.**

Ninth, Applicant agrees with the examiner's admission, in the bottom of page 5 of the Office action, that "Park . . . did not disclose [*sic*; disclose] wherein each of the displacement

portions in the effective area comprises a respective reflecting mirror situated at an end of the displacement portion a respective portion of a wiring pattern layer situated on the substrate below the respective reflecting mirror." But, any manner in which Wu may discuss any of these features does not fulfill the deficiencies of Park and Kim discussed above.

Tenth, contrary to the contention on page 6 of the Office action concerning claims 11 and 12, "the purpose disclosed by Wu" would not have been recognized in the "pertinent art of Park." Wu's "purpose" is to increase the speed, certainty, and exactitude of movements of micromirrors while reducing stiction of the components of the optomechanical switch comprising the micromirrors. Col. 7, lines 18-23. **This has no relation whatsoever to the claimed structures that include dummy areas and dummy structures.**

Eleventh, Applicant agrees with the examiner's admission, near the bottom of page 6 of the Office action concerning claim 13, that "Park did not disclose [sic; disclose] the displacement portions." But, any manner in which Wu may discuss this feature does not fulfill the deficiencies of Park and Kim discussed above.

Twelfth, contrary to the contention at the bottom of page 6 of the Office action concerning claim 13, "the purpose disclosed by Wu" would not have been recognized in the "pertinent art of Park." Wu's "purpose" is to increase the speed, certainty, and exactitude of movements of micromirrors while reducing stiction of the components of the optomechanical switch comprising the micromirrors. Col. 7, lines 18-23. **This has no relation whatsoever to the claimed structures that include dummy areas and dummy structures.**

Therefore, claims 9 and 11-13 are properly allowable. Withdrawal of the rejection is hereby requested.

Rejection of claims 5 and 6

Claims 5 and 6 stand rejected for alleged obviousness from Park in view of Kim and Wu. This rejection is traversed for the following reasons.

First, claims 5 and 6 depend from claim 1 and thus include all the features recited in claim 1. For this reason, claims 5 and 6 are properly allowable over any conceivable combination of Park and Kim for all the reasons discussed above and elsewhere in the record.

Second, the large paragraph in the middle of page 7 of the Office action, as noted above, contains a number of contentions (regarding alleged disclosure of dummy structures and regions in Park) that are **not true**. Untrue reasons do not provide proper support for any rejection.

Third, Applicant agrees with the Examiner's admission near the bottom of page 7 of the Office action that "Park does not disclose [sic; disclose] the three-dimensional structures include [sic; including] the reflecting mirrors and displacement portion[s] on which the reflecting mirrors are placed, and the displacement portions have [sic; having] space portion[s], between the displacement portions and the substrate." But, any manner in which Wu may discuss this feature does not fulfill the deficiencies of Park and Kim discussed above.

Fourth, contrary to the contention at the top of page 8 of the Office action concerning claim 5, "the purpose disclosed by Wu" would not have been recognized in the "pertinent art of Park." Wu's "purpose" is to increase the speed, certainty, and exactitude of movements of micromirrors while reducing stiction of the components of the optomechanical switch comprising the micromirrors. Col. 7, lines 18-23. **This has no relation whatsoever to the claimed structures that include dummy areas and dummy structures.**

Fifth, Applicant agrees with the examiner's admission in the middle of page 8 of the Office action that "Park didn't disclose [sic; disclose] dummy area surrounding the effective area." But, any manner in which Kim may discuss this feature does not fulfill the deficiencies of Park discussed above. Also, as discussed above, there is no motivation to combine Kim with Park.

Sixth, contrary to the contention at the middle of page 8 of the Office action concerning claim 5, "the purpose disclosed by Kim" would not have been recognized in the "pertinent art of Park." As discussed above, Park has no relationship whatsoever to dummy areas or dummy structures of any kind. Also, the examiner has not explained or identified any "purpose" of Kim that would have been "recognized" in the "pertinent work" of Park. The examiner's statement is without foundation and does not make sense.

Seventh, the large paragraph bridging pages 8 and 9 of the Office action, as noted above, contains a number of contentions (regarding alleged disclosure of dummy structures and regions in Park) that are **not true**. Untrue reasons do not provide proper support for any rejection.

Eighth, Applicant agrees with the examiner's admission in the middle of page 9 of the Office action that "Park didn't disclose [sic; disclose] dummy area surrounding the effective

area." But, any manner in which Kim may discuss this feature does not fulfill the deficiencies of Park discussed above. Also, as discussed above, there is no motivation to combine Kim with Park.

Ninth, contrary to the contention at the middle of page 9 of the Office action concerning claim 6, "the purpose disclosed by Kim" would not have been recognized in the "pertinent art of Park." As discussed above, Park has no relationship whatsoever to dummy areas or dummy structures of any kind. Also, the examiner has not explained or identified any "purpose" of Kim that would have been "recognized" in the "pertinent work" of Park. Hence, the examiner's statement is without foundation and is not understood.

In view of the above, claims 5-6 are properly allowable. Withdrawal of the rejection is requested.

Rejection of claim 7

Claim 7 stands rejected for alleged anticipation (35 U.S.C. §102(b)) by Park. This rejection is traversed for the following reasons.

As discussed at length above and elsewhere in the record, Park is silent on anything concerning dummy structures and dummy regions, and is silent on any reasons to include such structures and regions. Hence, Park provides no teaching, suggestion, hint, or motivation to form dummy structures in dummy areas or anywhere else, and provides no teaching, suggestion, or hint of how to go about forming dummy structures. Claim 7 requires, *inter alia*, that predetermined thin-film dummy structures be formed in a dummy area surrounding the effective area. Since Park is silent on such a step, claim 7 cannot possibly be anticipated by Park. Also, since Park provides no suggestion or hint of such a step, claim 7 is not obvious from Park, either.

Therefore, claim 7 is properly allowable. Withdrawal of the rejection is proper and hereby requested.

Since claim 14 depends from claim 1, claim 14 is properly allowable for all the reasons discussed above regarding claim 1, and because claim 14 adds at least one element to the combination of elements recited in claim 1.

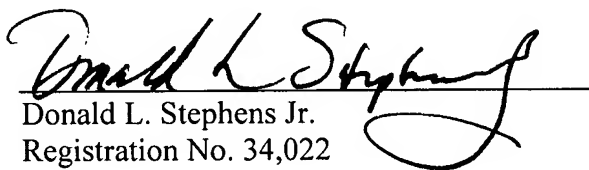
The pending claims are in condition for allowance, and early action to such end is requested.

Respectfully submitted,

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